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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/760,583	VORENKAMP, PIETER	
	Examiner	Art Unit	
	Mohsin (Ben) Benghuzzi	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 29 is objected to because of the following: The claim, as disclosed, is depending from claim 27 and references the limitation of indirect sensing, however, the limitation in claim 27 is that of direct sensing and not indirect sensing. It is assumed by Examiner that this is a typographical error on behalf of Applicant, and that the intention of Applicant was to have claim 29 depend from claim 24.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 4, 10, 11, 16, 17, and 19-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Bonaccio et al. (US 4,782,300).

1) Regarding claim 1:

Bonaccio et al. disclose a serial link transceiver with defect-detecting capability, comprising:

a differential transmitter (Abstract, lines 1-3, wherein, it is interpreted the 'transceiver' comprises a transmitter);

a differential receiver (Abstract, lines 1-3, wherein, it is interpreted the 'transceiver' comprises a receiver);

first and second differential transmission lines coupled between differential receiver and the differential transmitter (Column 1, lines 42-45; column 2, lines 22-23 and lines 28-31, wherein, 'for driving the pair of transmission lines' is interpreted as the transmission lines being coupled between the differential receiver and the differential transmitter); and

a monitoring system that detects a defect in one of the differential transmission lines (column 1, lines 45-48, wherein, the 'detection means' is interpreted as the monitoring system. Also see column 1, line 62 to column 2, line 8).

2) Regarding claim 2:

Bonaccio et al. disclose the apparatus according to claim 1, wherein the monitoring system detects one of:

open circuits in one of the transmission lines (Column 1, lines 40-42 and lines 49-61);

short circuits between one or more of the transmission lines and a power supply or ground plane (Column 4, lines 33-35); and

short circuits between the transmission lines (Column 4, lines 37-39).

3) Regarding claim 4:

Bonaccio et al. disclose the apparatus according to claim 1, wherein the monitoring system is coupled directly to one of the differential transmission lines (Column 1, lines 45-48, wherein, 'detects the signal level on the lines' is interpreted to indicate direct

coupling to the transmission lines, and direct coupling as claimed in the instant application is interpreted as disclosed at paragraph 0023, lines 2-3 of the specification).

4) Regarding claim 10:

Bonaccio et al. disclose the apparatus according to claim 1, wherein the monitoring system comprises a voltage monitoring system (Column 3, lines 2-11).

5) Regarding claim 11:

Bonaccio et al. disclose the apparatus according to claim 1, wherein the monitoring system comprises a current monitoring system (Column 4, lines 50-54, wherein, 'all shorts on the bus can be detected' in interpreted to be indicative of current monitoring).

6) Regarding claim 16:

Bonaccio et al. disclose the apparatus according to claim 1, wherein the monitoring system is configured to output an indication of a defect when direct current is detected exceeding a predetermined threshold (Column 3, lines 14-18, wherein, the 'constant current' is interpreted as direct current).

7) Regarding claim 17:

Bonaccio et al. disclose the apparatus according to claim 1, wherein the monitoring system is configured to output an indication of a defect when no signal is received by the differential receiver and a current is sensed by the monitoring system (Column 4, lines 50-54, wherein, 'receiver will not switch' is interpreted as no signal received by the receiver).

8) Regarding claim 19:

Bonaccio et al. disclose the apparatus according to claim 1, wherein the monitoring system is configured to output an indication of a defect when an open circuit exists in one or more of the differential transmission lines (Column 1, lines 40-42 and lines 49-61).

9) Regarding claim 20:

Bonaccio et al. disclose the apparatus according to claim 1, wherein the monitoring is configured to output an indication of a defect when a short circuit exists between one or more of the differential transmission lines and a power supply (Column 4, lines 33-35).

10)Regarding claim 21:

Bonaccio et al. disclose the apparatus according to claim 1, wherein the monitoring system is configured to output an indication of a defect when a short circuit exists between the differential transmission lines (Column 4, lines 37-39).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 3, 15, 18, and 22-27 rejected under 35 U.S.C. 103(a) as being unpatentable over Bonaccio et al. (US 4,782,300) in view of Paulos et al. (US 7,200,176).

1) Regarding claim 3:

Bonaccio et al. do not disclose, wherein the differential transmission lines comprise AC-coupled differential transmission lines. However, Paulos et al. disclose AC-coupled differential transmission lines (308, 310 in Fig. 3 and column 3, lines 51-58).

It is advantageous that differential transmission lines are AC-coupled. AC coupling prevents unwanted DC signals from propagating down the transmission line. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the transmission lines of Bonaccio et al. to be AC-coupled transmission lines, as Paulos et al. teach, in order to prevent unwanted DC signals from propagating down the transmission lines.

Regarding the monitoring system be able to detect short circuits across the AC-coupling capacitors, it is clearly obvious that if a system is capable of generally detecting short circuits in a transmission line, as Bonaccio et al. teach, then it is capable of detecting short circuits specifically across AC-coupling capacitors coupled to the transmission line.

2) Regarding claim 15:

Paulos et al. do not specifically teach the monitoring system is configured to output an indication of a defect when an alternating current is detected exceeding a

predetermined threshold, however, it is clearly obvious to one of ordinary skill in the relevant art that since the transmission line of Paulos et al. is AC-coupled, the current that is monitored by the monitoring system must be an alternating current.

3) Regarding claim 18:

Bonaccio et al. disclose an apparatus, wherein the monitoring system is configured to output an indication of a defect upon any of the following conditions:

direct current is sensed by the current monitoring system is detected exceeding a predetermined threshold (Column 3, lines 14-18, wherein, the 'constant current' is interpreted as direct current);

no signal is received by the differential receiver and a current is sensed by the current monitoring system is detected exceeding a predetermined threshold (Column 4, lines 50-54, wherein, 'receiver will not switch' is interpreted as no signal received by the receiver).

Regarding the condition that an alternating current being detected exceeding a predetermined threshold, as discussed in claim 15 above, it is clearly obvious to one of ordinary skill in the relevant art that since the transmission line of Paulos et al. is AC-coupled, the current that is monitored by the monitoring system must be an alternating current.

4) Regarding claim 22:

As discussed in claim 3 above, Paulos et al. disclose one or more AC-coupled differential transmission lines (308, 310 in Fig. 3 and column 3, lines 51-58), and that it is clearly obvious if a system is capable of generally detecting short circuits in a

transmission line, as Bonaccio et al. teach, then it is capable of detecting short circuits that specifically exist across AC-coupling capacitors coupled to the transmission line.

5) Regarding claim 23:

Bonaccio et al. disclose an apparatus, wherein the monitoring system is configured to output an indication of a defect when an open circuit exists in one or more of the differential transmission lines (Column 1, lines 40-42 and lines 49-61), when a short circuit exists between one or more of the differential transmission lines and a power supply (Column 4, lines 33-35), when a short circuit exists between the differential transmission lines (Column 4, lines 37-39).

Regarding the differential transmission lines being AC-coupled, as discussed in claim 3 above, Paulos et al. disclose AC-coupled differential transmission lines (308, 310 in Fig. 3 and column 3, lines 51-58).

Regarding the monitoring system outputting an indication of a defect when a short circuit exists across an AC coupling in one or more of the differential AC-coupled transmission lines, as discussed in claim 3 above, it is clearly obvious if a system is capable of generally detecting short circuits in a transmission line, as Bonaccio et al. teach, then it is capable of detecting short circuits that specifically exist across AC-coupling capacitors coupled to the transmission line.

6) Regarding claim 24:

Bonaccio et al. teach a method for detecting defects in a serial link transceiver that includes differential transmission lines, comprising sensing for one of:

open circuits in one of the transmission lines (Column 1, lines 40-42 and lines 49-61);

short circuits between one or more of the transmission lines and a power supply or ground plane (Column 4, lines 33-35);

short circuits between the transmission lines (Column 4, lines 37-39).

As discussed in claim 3 above, Paulos et al. disclose AC-coupled differential transmission lines (308, 310 in Fig. 3 and column 3, lines 51-58), and that it is clearly obvious if a system is capable of generally detecting short circuits in a transmission line, as Bonaccio et al. teach, then it is capable of detecting short circuits that specifically exist across AC-coupling capacitors in one of the differential transmission lines.

7) Regarding claim 25:

Bonaccio et al. teach, wherein the sensing comprises sensing current (Column 4, lines 50-54, wherein, 'all shorts on the bus can be detected' in interpreted to be indicative of current sensing).

8) Regarding claim 26:

Bonaccio et al. teach, wherein the sensing comprises sensing voltage (Column 3, lines 2-11).

9) Regarding claim 27:

As discussed in claim 4 above, Bonaccio et al. teach, wherein the sensing comprises directly sensing at one of the differential transmission lines (Column 1, lines 45-48, wherein, 'detects the signal level on the lines' is interpreted to indicate direct

sensing at the transmission lines, and direct sensing as claimed in the instant application is interpreted as disclosed at paragraph 0023, lines 2-3 of the specification).

6. Claims 5, 6, and 28-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonaccio et al. (US 4,782,300) in view of Howell (US 3,857,069).

1) Regarding claim 5:

Bonaccio et al. do not disclose, wherein the monitoring system is coupled indirectly to one of the differential transmission lines, however, Howell discloses a monitoring system that is coupled indirectly to a transmission line (Column 1, lines 18-23 and lines 33-36).

It is advantageous that a monitoring circuit is indirectly coupled to a transmission line. Indirect coupling does not require that a physical connection exist between the monitoring circuit and the transmission line. A required physical connection between the monitoring circuit and the line renders the system inefficient. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the monitoring circuit of Bonaccio et al. be indirectly coupled to one of the differential transmission lines, as Howell teaches, in order to result in an efficient transmission system.

2) Regarding claim 6:

Bonaccio et al. disclose, wherein the monitoring system is coupled within the differential receiver (Column 2 line 66 to column 3 line 7, wherein, it is clearly evident from Fig. 2 that blocks 34 and 36 are within the receiver).

3) Regarding claim 28:

As discussed in claim 5 above, Howell discloses, wherein the sensing comprises indirectly sensing (Column 1, lines 18-23 and lines 33-36).

4) Regarding claim 29:

As discussed in claim 5 above, Howell discloses, wherein the sensing comprises indirectly sensing at a receiver coupled within the differential transmission lines (Column 1, lines 18-23 and lines 33-36).

5) Regarding claim 30:

As discussed in claim 5 above, Howell discloses, wherein the sensing comprises indirectly sensing at a transmitter coupled within the differential transmission lines (Column 1, lines 18-23 and lines 33-36).

7. Claims 7-9 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonaccio et al. (US 4,782,300) and Howell (US 3,857,069), and further in view of Vadipour (US 6,392,448).

1) Regarding claim 7:

Bonaccio et al. or Howell do not specifically disclose that the differential receiver comprises a common mode control circuit coupled to the transmission lines, however, Vadipour disclose a common mode control circuit (Abstract, lines 1-3).

It is desirable that a defect control circuit be a mode control circuit. A common mode circuit is highly accurate and provides for minimization of nonlinear effects (See Vadipour column 2, lines 22-26). Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to have the control circuit of Bonaccio et al. and Howell be a common mode control circuit, as Vadipour teaches, in order to result in a transmission system with highly accurate defect detection, and one with minimal nonlinear distortion.

2) Regarding claim 8:

Bonaccio et al. disclose, wherein the monitoring system comprises a current monitoring system (Column 4, lines 50-54, wherein, 'all shorts on the bus can be detected' in interpreted to be indicative of current monitoring).

3) Regarding claim 9:

Bonaccio et al. disclose, wherein the monitoring system comprises a voltage monitoring system (Column 3, lines 2-11).

4) Regarding claim 12:

Vadipour discloses, wherein the current monitoring system is configured to sense alternating current provided by the common-mode control circuit (Column 1, lines 46-49).

5) Regarding claim 13:

Vadipour discloses, wherein the current monitoring system is configured to sense direct current provided by the common-mode control circuit (Column 1, lines 38-40, wherein, the 'average value' is interpreted as direct current).

6) Regarding claim 14:

As discussed in claims 12 and 13 above, Vadipour discloses, wherein the current monitoring system is configured to sense alternating current and direct current provided

by the common-mode control circuit (Column 1, lines 46-49 and lines 38-40, wherein, the 'average value' is interpreted as direct current).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Marbot (US 5,347,538) discloses a transceiver for transmission over serial bi-directional links.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohsin (Ben) Benghuzzi whose telephone number is (571) 270-1075. The examiner can normally be reached Monday through Friday, 8:30am- 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mohsin (Ben) Benghuzzi

April 18, 2007

MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER